"We will communicate widely the content, relevancy, and excitement of NASA's missions and discoveries to inspire and to increase understanding and the broad application of science and technology"

NASA Strategic Plan, 1996

Program Plan

NASA Scientific and Technical Information Program

- Director's Note
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- The Plan
- Customers and Stakeholders
- NASA's and the Nation's Future Needs

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Director's Note

As we move toward the year 2000, NASA is faced with great challenges and even greater opportunities. Following a period of reevaluation and reinvention, we are moving rapidly toward new partnerships, approaches, and technologies that will enhance the way we do business.

NASA's Scientific and Technical Information (STI) Program is an integral part of NASA's future. The program supports the Agency's missions to communicate scientific knowledge and understanding and to help transfer NASA's research and development (R&D) to the aerospace and academic communities. This program ensures that the Agency will remain at the leading edge of R&D by quickly and efficiently capturing worldwide STI to use for problem solving, awareness, and knowledge transfer. The acquisition, use, and dissemination of STI, therefore, are essential not only to the Agency but also to the Nation's economic competitiveness.

This *Program Plan* describes the STI Program, its customers, its future strategic direction, and why the STI Program is essential to NASA, the Nation, and the international scientific and technical communities. The Program Plan was developed after an Agency-wide reengineering effort that assessed the current program from both the customer and the stakeholder (those with vested interests in the program) viewpoints. Customers, stakeholders, NASA Center and Agency personnel, and external partners participated in this assessment.

The STI Program looks forward to the challenges ahead, and we invite you to participate with us to continue to improve NASA's unique national resource in scientific and technical information.

Roland Ridgeway
Director, STI Program
NASA Headquarters, Code AO

STI Program:

What It Is and Why It Is Essential to NASA and the Nation

NASA's scientific and technical information (STI) is an essential product of research, facilitates technology transfer, and enhances the competitive edge of U.S. aerospace companies and educational institutions. NASA's STI is an integral part of the Agency's information transfer and is critical to NASA's mission and vital to the Nation. By ensuring a fast, two-way process of internal and external information exchange, the STI Program helps NASA to avoid duplication of research, time, and cost and to make its wealth of information available to benefit its customers.

We in the STI Program promote an aggressive, cost-effective, and relevant Agency-wide STI Program--one that has strong ties to the information technology trends within and outside the Agency and is based on customer needs and partnership arrangements within NASA (e.g., Headquarters, all Centers, program offices, and customers) and outside the Agency. In addition, we continue to pursue a strong leadership position outside NASA in forming partnerships with other agencies and organizations to leverage cost-savings and efficiency benefits in identifying, publishing, archiving, and disseminating STI.

- **STI Defined**
- **Scope and Benefits of the STI Program**
- **STI: An Integral Part of NASA's Information Infrastructure**

STI Defined

STI is the result of scientific and technical research and mission-related activities. STI includes facts, theory, observations, or any other type of results from research or technical operations in any scientific or technical field. In other words, STI is a collection of data (in any media format) that represents a body of scientific, technical, or management knowledge identified as having value to accomplish NASA's missions.

Examples of STI products are research reports, journal articles, numerical data sets, wind tunnel and satellite data, technical videos, scientific and technical photographs, on-line scientific bibliographic databases, and technical resource locators. These products may include laboratory notes, preliminary technical information (marked as such), lessons learned, scientific and technical operational information, and management information related to the operation of scientific and technical programs and projects.

Scope and Benefits of the STI Program

The STI Program supports the acquisition, production, management, and dissemination of STI relevant to aeronautics and space science. The purpose of the NASA STI Program is to

- Help ensure that NASA research is cost-effective by providing NASA personnel with access to existing NASA and worldwide research results. In this way, the NASA STI Program reduces duplication and increases productivity, which not only increases the yield of the tax dollars invested in NASA research but also accelerates scientific progress.
- Support the work of the U.S. aerospace industries. These industries are among the strongest in our national economy. To maintain their competitiveness, they rely on current knowledge of R & D developments in NASA, the United States, and the world.
- Share the results of NASA's research with the world, as appropriate. NASA's achievements in exploring the universe and the near-Earth environment have captured worldwide attention. The STI Program, under the auspices of NASA Headquarters and the Lead Center at Langley Research Center, is composed today primarily of library and publishing services. However, because many electronic processes in the future will merge disciplines and many Center STI organizations include additional activities in STI, we must and will establish strong links to the printing and reproduction, graphics, video, photographic, external affairs, technology transfer, and educational organizations within NASA and outside the Agency.

STI Program:

An Integral Part of NASA's Information Infrastructure

NASA has three central missions (NASA Strategic Plan, 1996):

- To advance and communicate scientific knowledge and understanding of the Earth, the solar system, and the universe and use the environment of space for research
- To explore, use, and enable the development of space for human enterprise
- To research, develop, verify, and transfer advanced aeronautics, space, and related technologies.

Each of these missions produces a wealth of important scientific and technical information that is essential to the Agency, to U.S. aerospace companies and educational institutions, and to the Nation. The STI Program is an integral part of gathering and disseminating this mission-related information. This program is not only part of NASA's information infrastructure but also is an important link in bringing the results of NASA's research to the Nation and its citizens.

We in the STI Program strongly believe in the need to share NASA's scientific and technical information. We are excited about the future, and look forward proudly to the challenges and opportunities that lie ahead to serve the Agency and the Nation

The Plan:

Changing the Way We Do Business

Vision

Mission

Goals

Objectives

Strategies

Approach and Organizational Structure

Vision

The STI Program will foster innovative ways for NASA to collect, organize, publish, and disseminate not only the STI that it produces but also the relevant and timely information that it obtains from the scientific and technical community outside the Agency. By providing access to NASA and worldwide STI, we will create a virtual research tool for the science and engineering community and an aerospace information resource for the Nation.

We affirm that

- U.S. citizens and the world will have efficient access to NASA's knowledge about the universe and NASA's work in exploring it
- NASA and the U.S. aerospace community will have prompt, convenient access to the best data from NASA and global sources to support U.S. leadership in research and development

Mission

As the official STI broker for NASA, the STI Program will quickly, efficiently, and cost-effectively provide the NASA community with desktop access to STI produced by NASA and the world's aerospace community. We will also provide the aerospace community and the general public access to the intellectual scientific and technical information output and achievements of NASA.

Goals

By the year 2000, NASA will capture and disseminate all NASA STI and provide access to more worldwide mission-related information for its customers. When possible and economical, this information will be provided directly to the desktop in full-text format and will include printed material, electronic documentation, video, audio, multimedia products, photography, work-in-progress, lessons-learned data, research laboratory files, wind tunnel data, metadata, and other information from the scientific and technical communities that will help ensure the competitiveness of U.S. aerospace companies and educational institutions.

Additionally, the STI Program will become a national model for providing scientific and technical information, will aggressively lead government agencies in partnership to collect and disseminate STI, and will help enhance the public's understanding of the assets that NASA's information provides to its customers. The STI Program goals include

- Facilitating and ensuring effective STI transfer into and out of NASA
- Aggressively capturing, preserving, and disseminating all NASA-produced STI
- Proactively acquiring and providing access to all mission-related external STI
- Being the official knowledge broker of STI related to NASA's missions
- Helping NASA's other information programs (Technology Transfer and Commercialization, Office of Human Relations and Education, and Office of Public Affairs and External Relations) to communicate the accomplishments of NASA's scientific and technical community to the Nation and the world to demonstrate NASA's continued relevance and value

Objectives

The objectives of the STI Program are as follows:

- Establish and maintain a strategy for acquisition, preservation, and dissemination of STI products and services that are responsive to NASA mission objectives
- Base the program on identified customer and stakeholder needs; design and evaluate our products and services based on these needs, how the information is used, and what will be needed in the future
- Acquire and maintain a comprehensive, relevant repository of STI
- Capture, preserve, and disseminate 100% of NASA-produced STI and reduce the time required to locate, capture, and disseminate this STI
- Ensure an equitable balance of STI exchange between NASA and NASA's exchange partners
- Provide seamless electronic full-text delivery (using navigators/organizers) to the desktop using advanced computer systems for a wide variety of information types, formats, and media that are essential to and advance the knowledge and competitiveness of our customers
- Radically reduce the number of divergent systems and databases that our customers must use to access information
- Link the NASA STI Program to other world-class information programs
- Foster collaborative internal and external partnerships
- Streamline information resources and processes to remove duplication and redundancies
- Implement mechanisms for performance measurement, feedback, and continuous improvement
- Maintain access to STI personnel who can help provide training, act as problem solvers, or provide assistance when a customer needs more help than can be provided via their desktops
- Help make STI products and services known and educate customers in their most-effective use

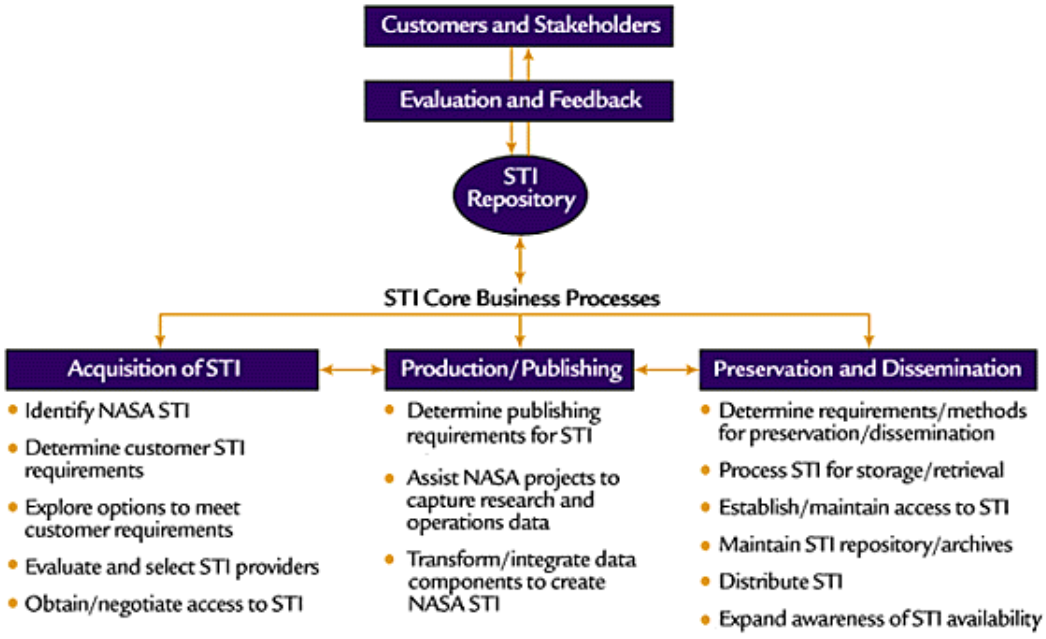
Strategies

The Lead Center, in partnership with NASA Headquarters, the Centers, and other NASA organizations, recently initiated a Business Process Reengineering (BPR) effort to determine the future Concept of Operations. The BPR used four reengineering teams that were facilitated by an independent contractor. These teams included a Steering Team (Headquarters and high-level Center personnel), a Resource Team (specialists both inside and outside the STI Program), a Customer Team (customers from all Centers and other NASA organizations), and a Core Team (STI personnel from all centers). These teams (1) identified the current and future customers, stakeholders, and suppliers and determined their product and services needs, (2) evaluated these needs relative to current processes, services, products, and budgets, (3) expanded the scope of STI products to include media such as metadata, multimedia, video, and photography, (4) determined core business areas, and (5) recommended a Concept of Operations for the core business areas. In addition, recent studies on STI that researched external customer needs and STI usages and practices in other countries were reviewed and incorporated into the Concept of Operations.

Based on these findings, the STI Program will use the following strategies to implement this Plan:

- Develop and institute Program and Implementation Plans that include technical and management approaches for the STI Program
- Segment products and services (e.g., customization) to meet the needs of different types of customers
- Institute a method at the Center level to ensure that NASA STI is acquired by the Program
- Establish metrics and tools that allow the STI Program to continuously evaluate and implement necessary programmatic changes based on customer needs, staffing and budgetary levels, and changing technological and economic environments
- Use test beds and benchmarking to evaluate innovative ideas for the Program and "partner" Centers that provide "best-in-class" services and products
- Institute an aggressive customer awareness, training, marketing, and advocacy plan for the STI Program which is based on NASA’s strategic missions and goals
- Ensure a coordinated and focused Agency approach that makes use of partnerships for Program implementation and best-in-class organizations and teaming arrangements
- Use an internal STI grant program to the Centers which provides additional financial incentives to leverage Center expertise for Agency-wide STI benefit
- Establish guidelines and processes for collection and protection of all sensitive information, including classified, restricted, and commercially sensitive information
- Spearhead an effort to define and institute a non-DoD-based protection system for technology to protect information and systems integrity, availability, and confidentiality
- Strengthen the collection of worldwide STI (including translations) in the STI database
- Provide access to full-text electronic STI directly to the customers’ desktops

NASA STI Core Business Processes



Approach and Organizational Structure

Our approach is to design and implement the STI Program based on customer and stakeholder needs; to stress partnerships among NASA Headquarters, the Lead Center at Langley, the Centers (both Center STI programs and Center organizations that produce STI), and external government and industry STI organizations; and to use evaluation and metrics to improve program performance. We will aggressively move toward taking a leadership role in STI among other government agencies and industry.

The organization and responsibilities of the STI Program and other organizations within NASA are as follows.

Headquarters STI Program

The Headquarters program is responsible for STI policy, budgets, and international and external cooperative agreements. This includes the issuance of NASA Policy Directive NPD 2200.5E, which gives policy direction for the program.

Lead Center

The Lead Center at Langley Research Center, through its Agency administrative office (the STI Program Office), is responsible for STI procedures; reengineering the STI Program; analysis and evaluation of the effectiveness of the STI Program; a Program Plan; an Implementation Plan (the yearly STI Program Plan); the Agency's STI Procedures and Guidelines (NPG 2200.2A); development of systems to identify, acquire, publish, disseminate, access, and evaluate NASA STI; coordination of a virtual warehouse of STI; coordination of the STI Program with STI programs of all NASA Field Centers; customer awareness, marketing, and advocacy; and external partnership advocacy, follow-up, and support under the direction of Headquarters. The Lead Center also oversees the Center for AeroSpace Information (CASI) or its successor. CASI is NASA's contractor-run facility that acquires, maintains, disseminates, and preserves NASA STI and NASA's STI database, which houses more than 3 million bibliographic records of STI.

STI Programs at NASA Centers

The NASA Centers are responsible for designating an individual to be a focal point for STI activities at the Center; for acquiring, tracking, and producing or having produced NASA STI related to their Center mission; and for ensuring that Center STI reaches the STI database. Centers are also responsible for identifying and developing expertise in STI technology development or process improvement, submitting related program proposals to the NASA STI Program Office at Langley, and implementing the approved proposals. Centers are required to maintain and share Center STI statistics and customer response information with the STI Program Office at Langley.

Other Organizations at NASA Centers

Identifying, tracking, and acquiring NASA's STI for the STI database are not solely the responsibilities of the STI Program. Other NASA organizations have the responsibility to contact the STI Program at their Centers to determine how to get their project, mission, and organizational STI into the NASA STI database. It is the responsibility of every NASA employee and contractor to ensure that NASA's STI is preserved for the Nation and its citizens.

Customers and Stakeholders

Current and future customers and stakeholders of the STI Program are listed below.

Internal Customers and Stakeholders

- NASA and contractor engineers, scientists, and support staff
- NASA management
- NASA technology transfer and commercialization programs
- NASA Office of Education and Office of Public Affairs
- NASA Headquarters
- STI intermediaries (STI resource personnel)
- NASA Chief Information Officers

External Customers and Stakeholders

- Foreign and domestic partners
- Other government agencies
- Educational institutions
- Commercial STI providers
- General Public

NASA STI Overview Chart

NASA STI Overview

- Bring customers and decision makers into process
- Create unified program and resources driving to common goals
- Actively pursue NASA's and STI's missions

Looking Toward NASA's and the Nation's Future Needs

The concepts listed below form the basis for the Concept of Operations.

- NASA strategic-mission-driven approaches for acquisition, preservation, and dissemination
- Aggressive and collaborative approach to effect change (which involves Centers' management, Chief Information Officers, enterprise and mission leaders, chief scientists and engineers, customers and key stakeholders, technology transfer and commercialization, and business office and procurement personnel)
- STI functions that are distributed to lowest level possible through a phased-in timeline
- Fully integrated, customer-focused electronic information services, including use of a segmented database that maintains an active mission-critical repository and an inactive historical repository (for older information) for faster searching of the database; services will be provided to the desktop when feasible
- Business processes that are based on core areas and support processes (marketing, planning, metrics, standards, budget and resource management, training and education, STI tools and techniques, and communication and integration)
- Systems to protect and include STI that is classified, restricted, proprietary, or commercially sensitive so it is not blocked from the communities who need it
- Monitoring of STI exchange agreements to ensure that there is a balance of STI exchange and that competitive worldwide information and translations are entering the database
- Proactive use of partnerships within NASA and outside the Agency to achieve the STI Program goals

Mission-Driven Strategies Chart

For more information about this NASA STI Program Plan or the NASA STI Program, contact the STI Program Office at Langley Research Center at phone number 757-864-5047, at fax number 757-864-7484, or at email g.j.roncaglia@larc.nasa.gov.

Mission-Driven Strategies

NASA Strategic Enterprises & Missions	Center Role & STI Focus									
	Ames	Dryden	Goddard	Johnson	JPL	Kennedy	Langley	Lewis	Marshall	Stennis
Mission to Planet Earth										
Earth Science			■							
Atmospheric Science							■			
Aeronautics										
Flight Research		■								
Airframe Systems & Aerodynamics							■			
Aeropropulsion								■		
Aviation Operation Systems	■									
Human Exploration & Development of Space										
Astrobiology	■									
Human Exploration				■						
Astro Materials				■						
Transportation Systems Development									■	
Microgravity Science									■	
Space Launch						■				
Propulsion Testing										■
Space Science										
Astro Materials				■						
Physics & Astronomy			■							
Planetary Science & Exploration					■					

Center-defined Scope & Coverage Requirements Based on Mission